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**Story, Jr. et al.**

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(54) **RULE-BASED PRESENTATION OF RELATED CONTENT ITEMS**

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***G06F 3/0481*** (2013.01)

(52) **U.S. Cl.**
CPC ..... ***G06F 3/0481*** (2013.01)

(58) **Field of Classification Search**
CPC ..... G06F 3/048
See application file for complete search history.

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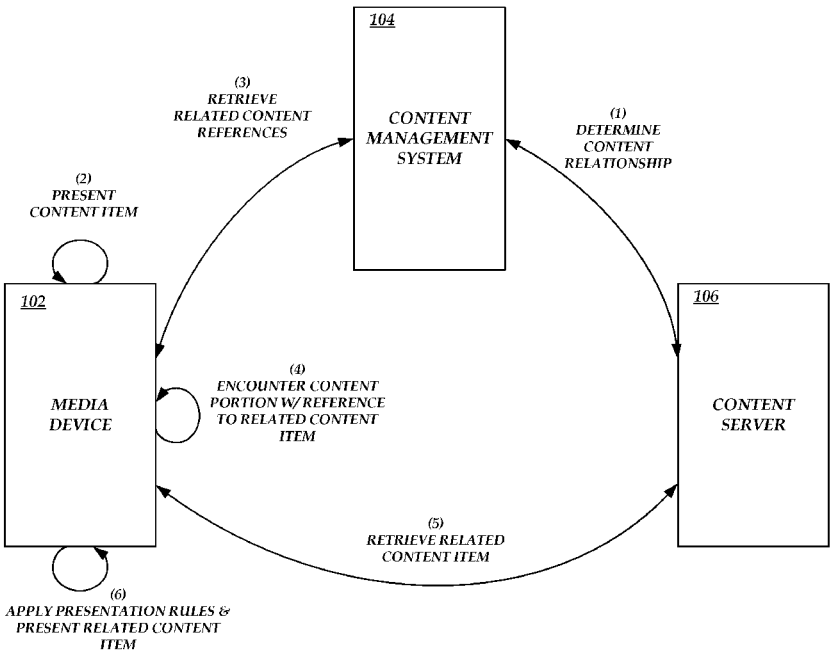
(57) **ABSTRACT**

Features are disclosed for presenting multiple content items based on one or more rules defining how the multiple content items are to be presented. One content item may be a primary content item and any number of additional content items may be related to or supplement the primary content item in some way. Rules may define which related content items may be presented and, in the case of multimedia content (e.g., content with both audio and video elements), which elements of the primary content may be overridden by or mixed with related content, and which may not. References to related content may be embedded in the primary content item, or references may be accessed at a content management system or service.

**33 Claims, 9 Drawing Sheets**



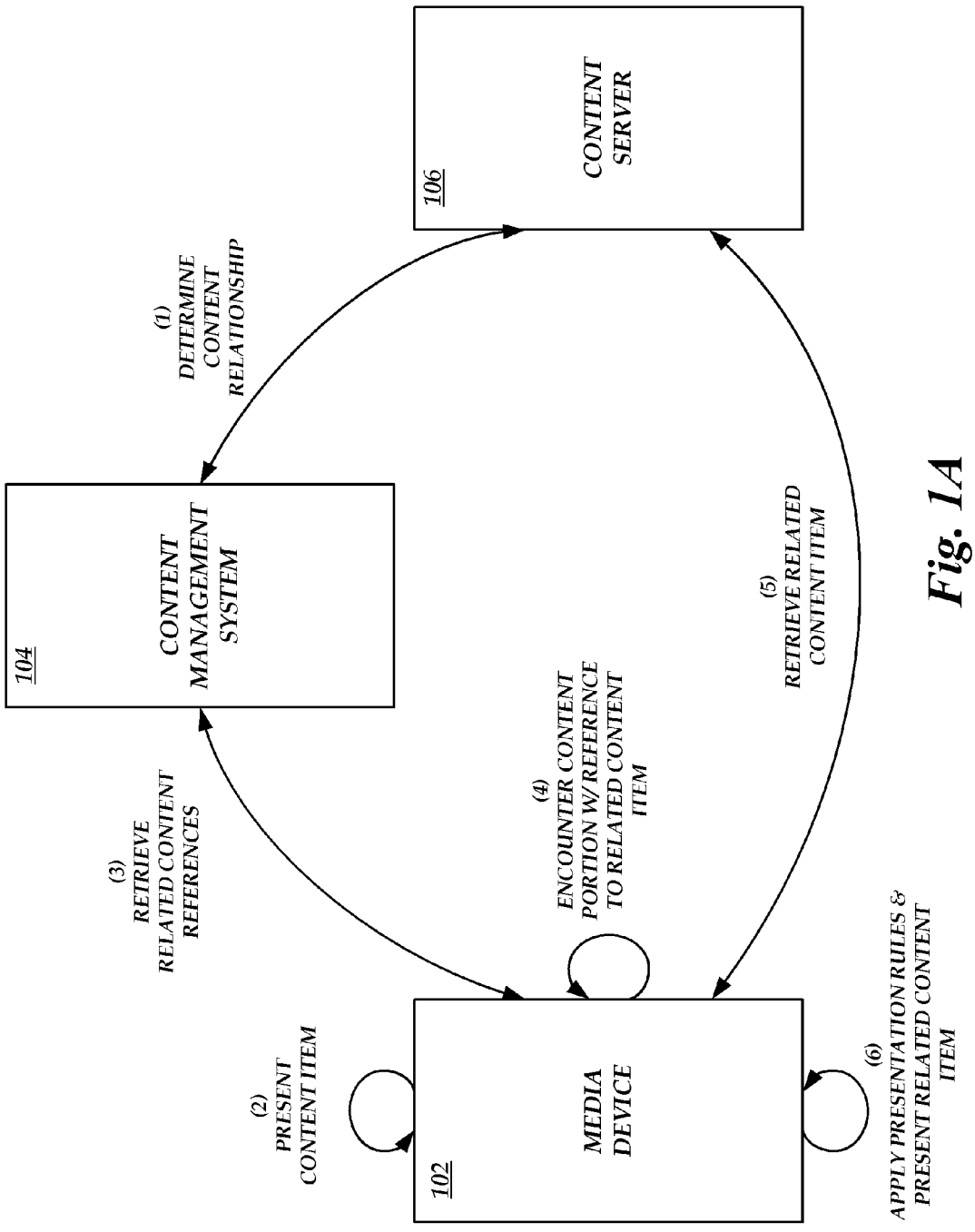

106
CONTENT SERVER
(1) DETERMINE CONTENT RELATIONSHIP
104
CONTENT MANAGEMENT SYSTEM
(3) RETRIEVE RELATED CONTENT REFERENCES
(4) ENCOUNTER CONTENT PORTION W/ REFERENCE TO RELATED CONTENT ITEM
(5) RETRIEVE RELATED CONTENT ITEM
(2) PRESENT CONTENT ITEM
102
MEDIA DEVICE
(6) APPLY PRESENTATION RULES & PRESENT RELATED CONTENT ITEM

*Fig. 1A*

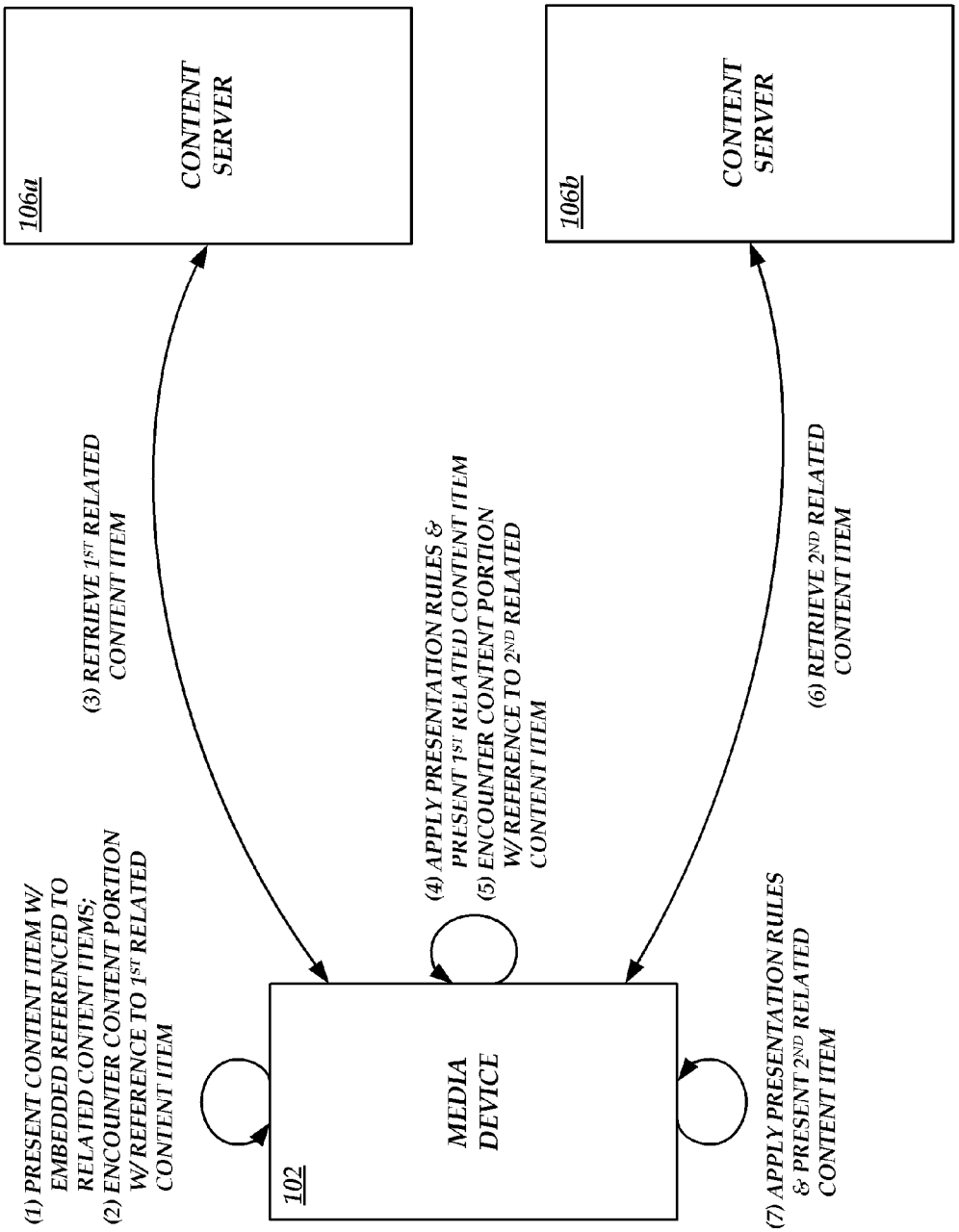

106a
CONTENT SERVER
106b
CONTENT SERVER
102
MEDIA DEVICE
(1) PRESENT CONTENT ITEM W/ EMBEDDED REFERENCED TO RELATED CONTENT ITEMS;
(2) ENCOUNTER CONTENT PORTION W/ REFERENCE TO 1ST RELATED CONTENT ITEM
(3) RETRIEVE 1ST RELATED CONTENT ITEM
(4) APPLY PRESENTATION RULES & PRESENT 1ST RELATED CONTENT ITEM
(5) ENCOUNTER CONTENT PORTION W/ REFERENCE TO 2ND RELATED CONTENT ITEM
(6) RETRIEVE 2ND RELATED CONTENT ITEM
(7) APPLY PRESENTATION RULES & PRESENT 2ND RELATED CONTENT ITEM

*Fig. 1B*

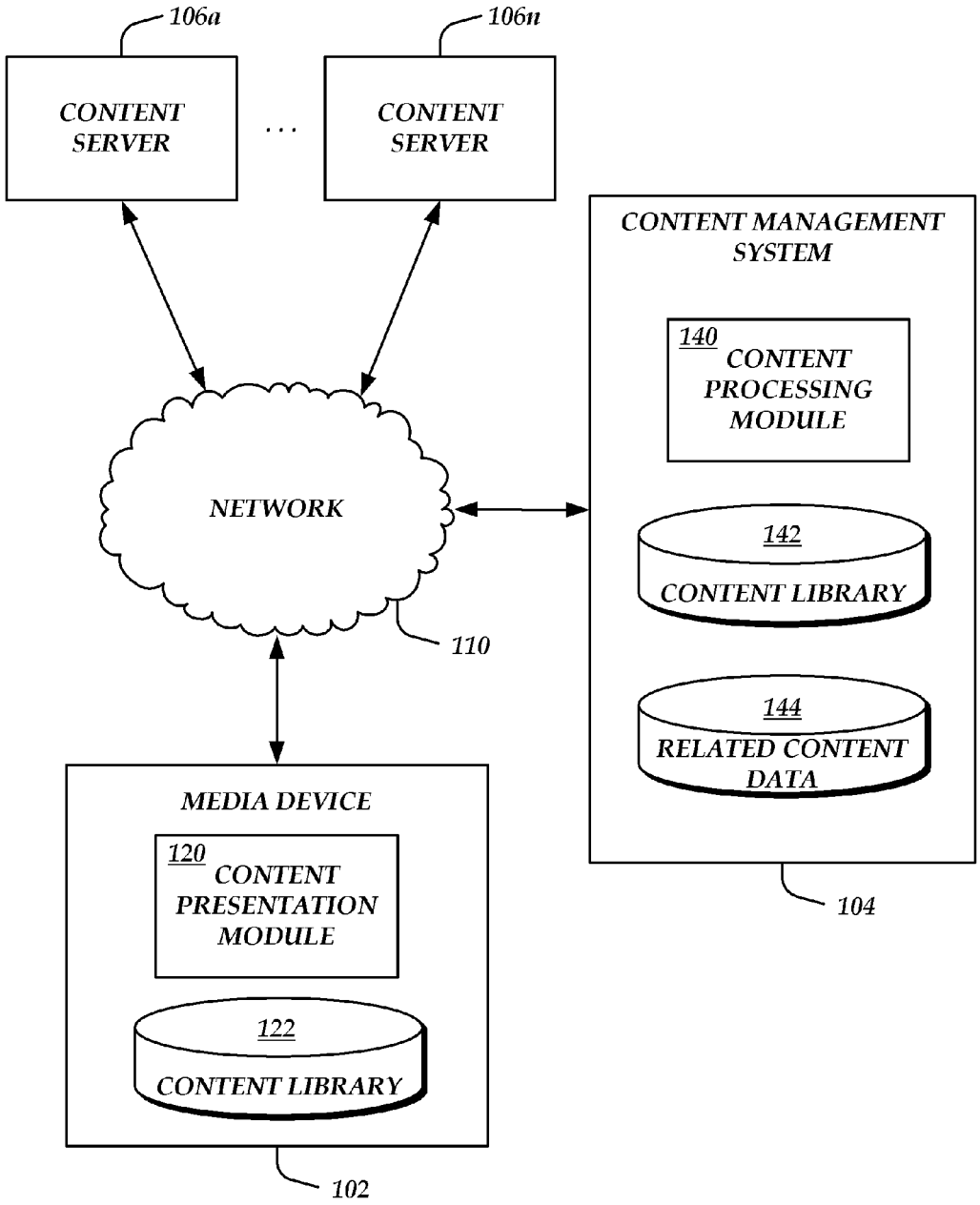

106a
106n
CONTENT SERVER
...
CONTENT SERVER
CONTENT MANAGEMENT SYSTEM
140
CONTENT PROCESSING MODULE
NETWORK
142
CONTENT LIBRARY
110
144
RELATED CONTENT DATA
MEDIA DEVICE
120
CONTENT PRESENTATION MODULE
122
CONTENT LIBRARY
104
102

*Fig. 2*

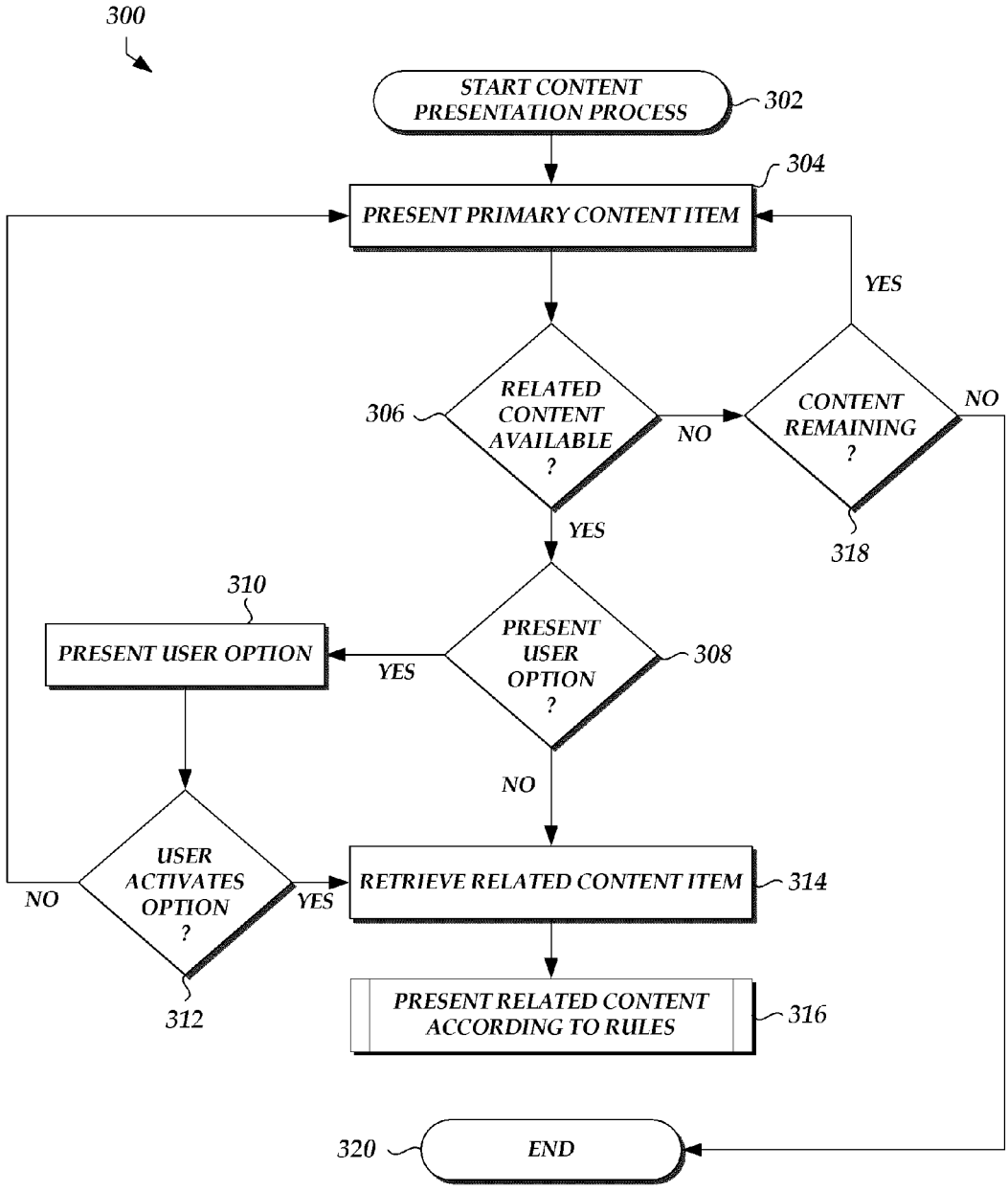

300
START CONTENT PRESENTATION PROCESS
302
304
PRESENT PRIMARY CONTENT ITEM
YES
306
RELATED CONTENT AVAILABLE ?
NO
CONTENT REMAINING ?
NO
318
YES
310
PRESENT USER OPTION
YES
PRESENT USER OPTION ?
308
NO
USER ACTIVATES OPTION ?
NO
YES
RETRIEVE RELATED CONTENT ITEM
314
312
PRESENT RELATED CONTENT ACCORDING TO RULES
316
320
END

*Fig. 3*

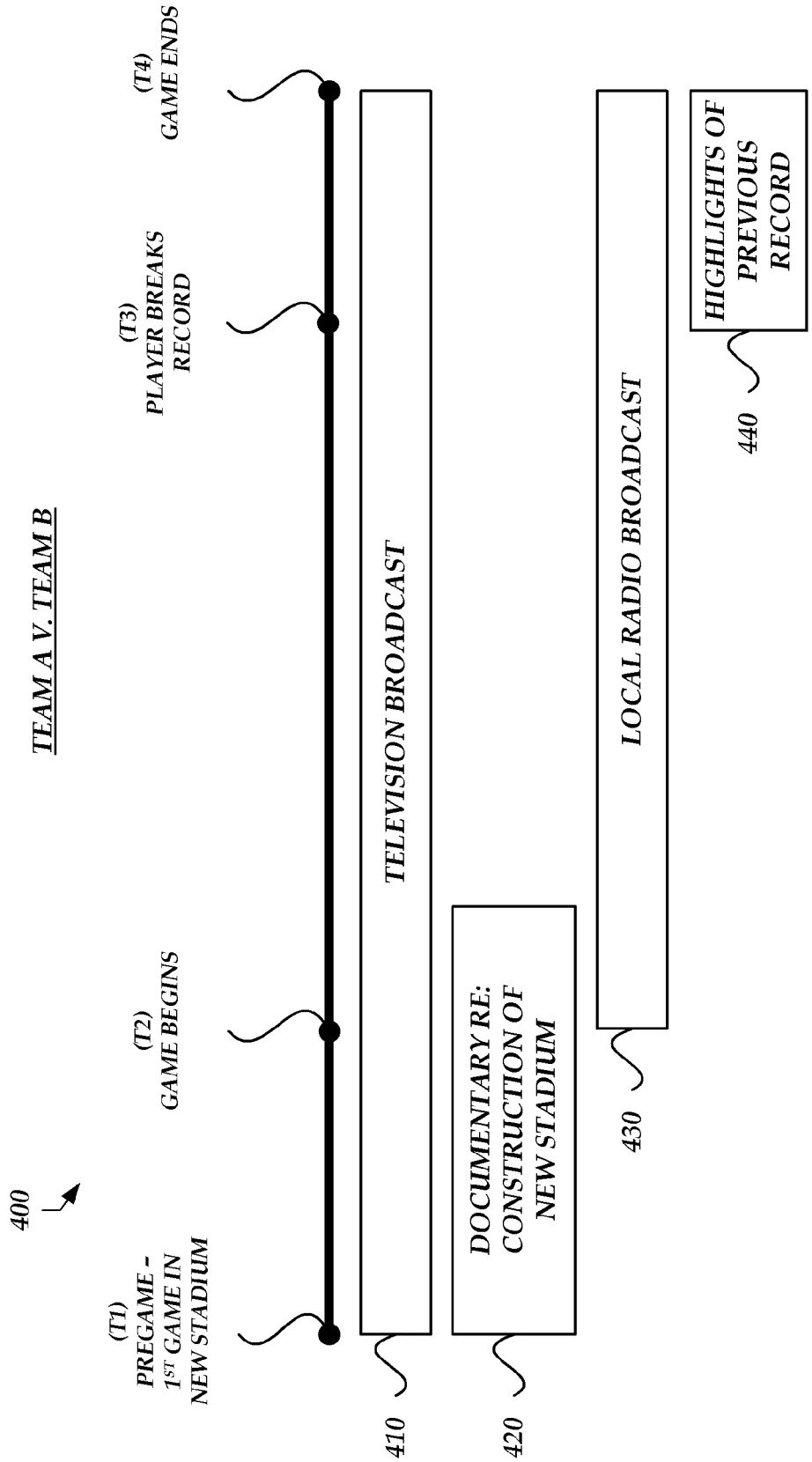

400
TEAM A V. TEAM B
(T1) PREGAME - 1ST GAME IN NEW STADIUM
(T2) GAME BEGINS
(T3) PLAYER BREAKS RECORD
(T4) GAME ENDS
TELEVISION BROADCAST
410
DOCUMENTARY RE: CONSTRUCTION OF NEW STADIUM
420
LOCAL RADIO BROADCAST
430
HIGHLIGHTS OF PREVIOUS RECORD
440

*Fig. 4A*

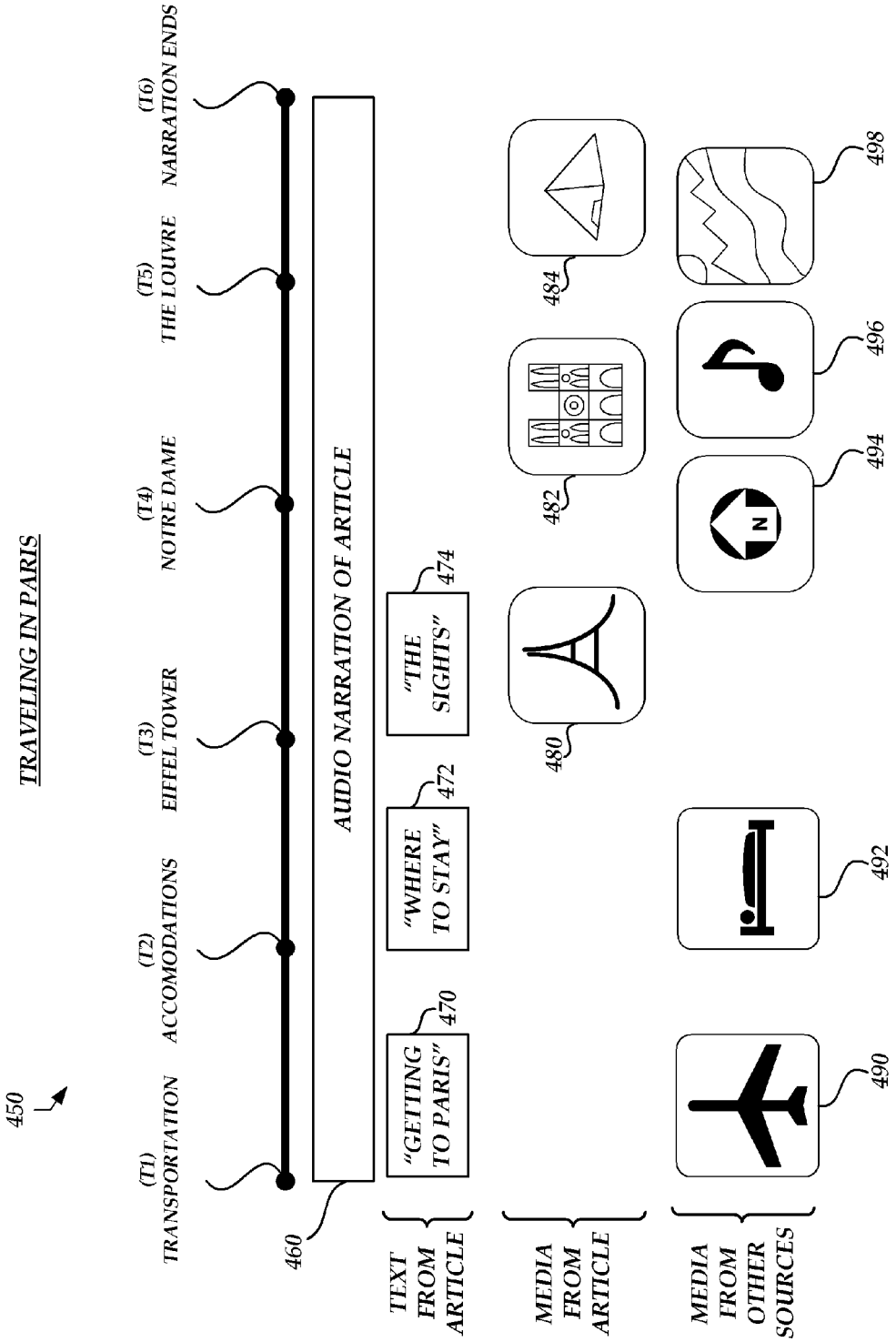

450
TRAVELING IN PARIS
(T1) TRANSPORTATION
(T2) ACCOMODATIONS
(T3) EIFFEL TOWER
(T4) NOTRE DAME
(T5) THE LOUVRE
(T6) NARRATION ENDS
460
AUDIO NARRATION OF ARTICLE
"GETTING TO PARIS"
470
"WHERE TO STAY"
472
"THE SIGHTS"
474
480
482
484
490
492
494
496
498
TEXT FROM ARTICLE
MEDIA FROM ARTICLE
MEDIA FROM OTHER SOURCES

*Fig. 4B*

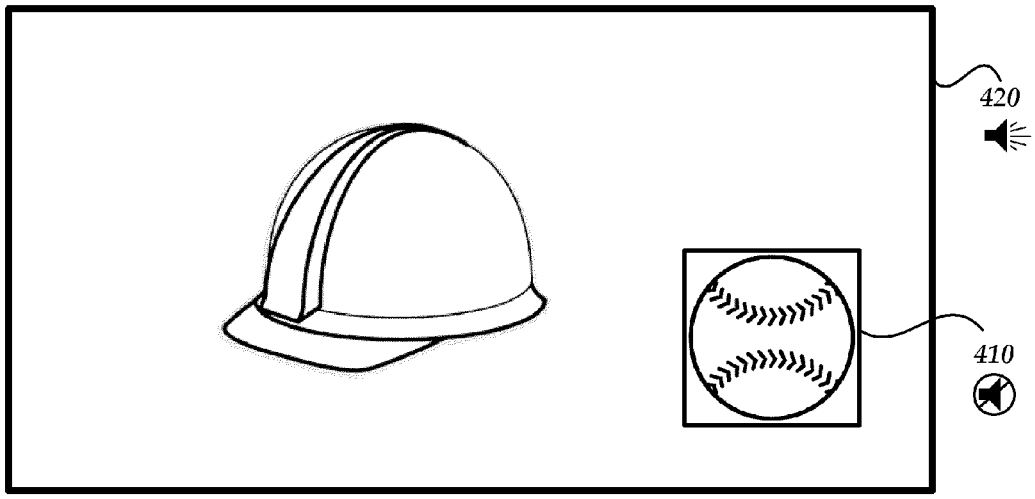



*Fig. 5A*

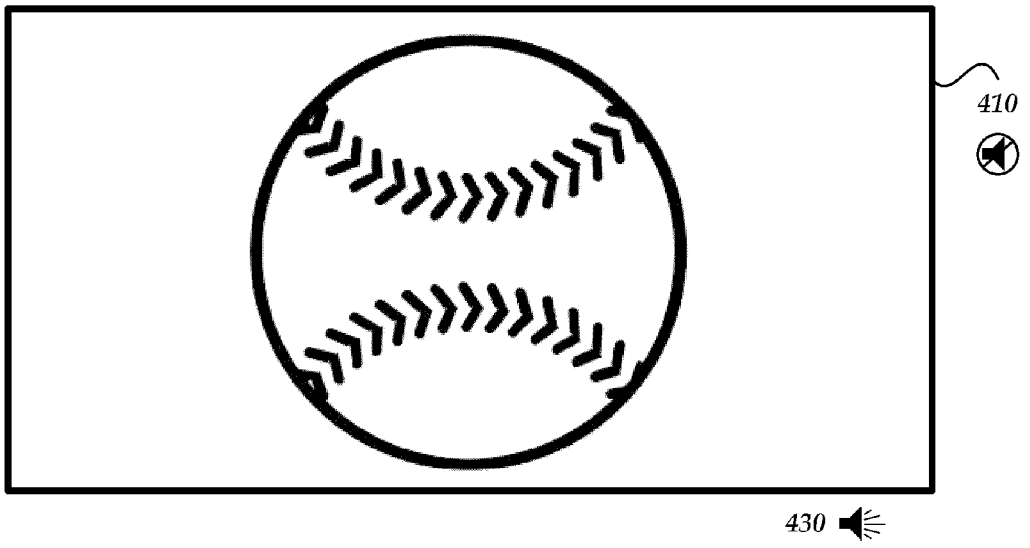



*Fig. 5B*

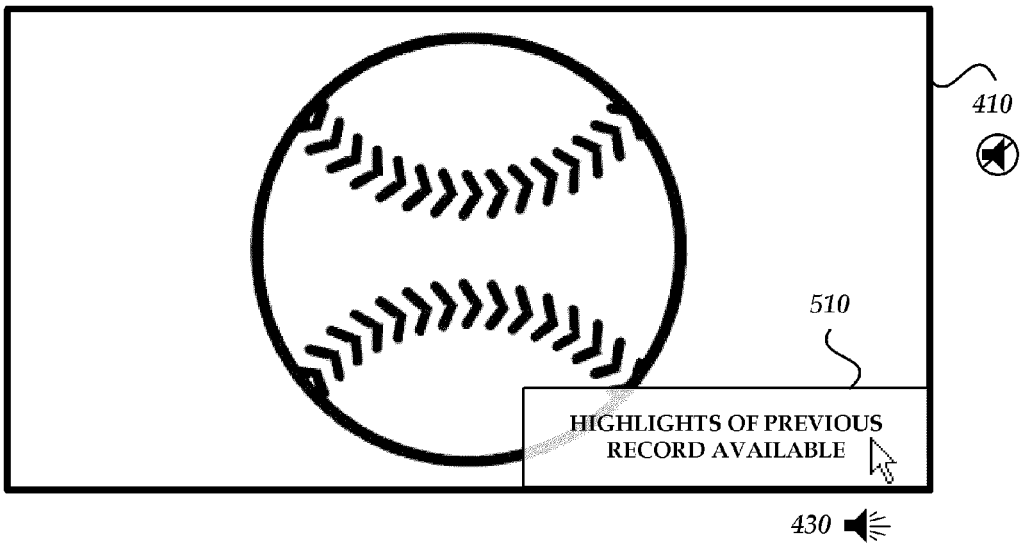

410
510
HIGHLIGHTS OF PREVIOUS RECORD AVAILABLE
430

*Fig. 5C*

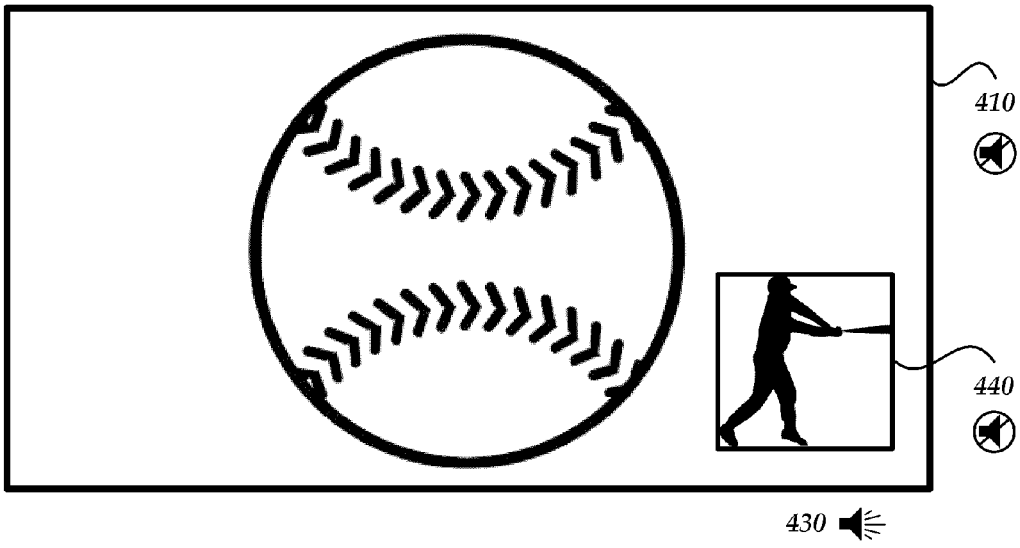

410
440
430

*Fig. 5D*

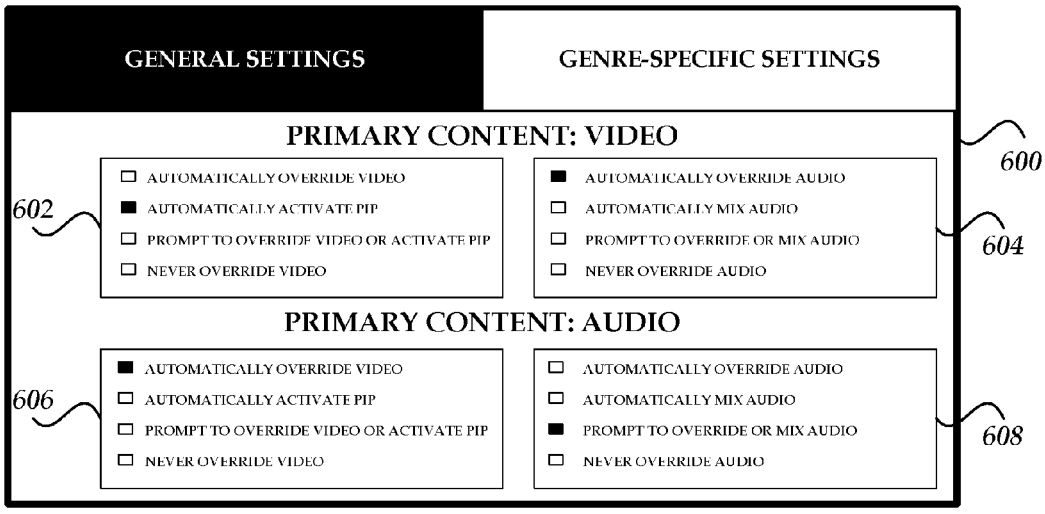

GENERAL SETTINGS
GENRE-SPECIFIC SETTINGS
PRIMARY CONTENT: VIDEO
600
602
AUTOMATICALLY OVERRIDE VIDEO
AUTOMATICALLY ACTIVATE PIP
PROMPT TO OVERRIDE VIDEO OR ACTIVATE PIP
NEVER OVERRIDE VIDEO
AUTOMATICALLY OVERRIDE AUDIO
AUTOMATICALLY MIX AUDIO
PROMPT TO OVERRIDE OR MIX AUDIO
NEVER OVERRIDE AUDIO
604
PRIMARY CONTENT: AUDIO
606
AUTOMATICALLY OVERRIDE VIDEO
AUTOMATICALLY ACTIVATE PIP
PROMPT TO OVERRIDE VIDEO OR ACTIVATE PIP
NEVER OVERRIDE VIDEO
AUTOMATICALLY OVERRIDE AUDIO
AUTOMATICALLY MIX AUDIO
PROMPT TO OVERRIDE OR MIX AUDIO
NEVER OVERRIDE AUDIO
608

*Fig. 6A*

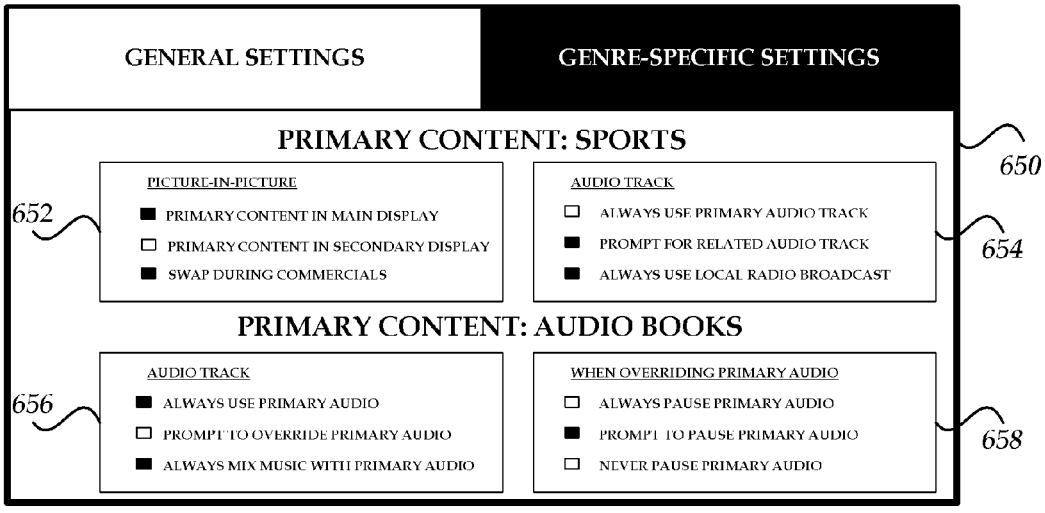

GENERAL SETTINGS
GENRE-SPECIFIC SETTINGS
PRIMARY CONTENT: SPORTS
650
652
PICTURE-IN-PICTURE
PRIMARY CONTENT IN MAIN DISPLAY
PRIMARY CONTENT IN SECONDARY DISPLAY
SWAP DURING COMMERCIALS
AUDIO TRACK
ALWAYS USE PRIMARY AUDIO TRACK
PROMPT FOR RELATED AUDIO TRACK
ALWAYS USE LOCAL RADIO BROADCAST
654
PRIMARY CONTENT: AUDIO BOOKS
656
AUDIO TRACK
ALWAYS USE PRIMARY AUDIO
PROMPT TO OVERRIDE PRIMARY AUDIO
ALWAYS MIX MUSIC WITH PRIMARY AUDIO
WHEN OVERRIDING PRIMARY AUDIO
ALWAYS PAUSE PRIMARY AUDIO
PROMPT TO PAUSE PRIMARY AUDIO
NEVER PAUSE PRIMARY AUDIO
658

*Fig. 6B*

# RULE-BASED PRESENTATION OF RELATED CONTENT ITEMS

## BACKGROUND

Electronic devices may be used to consume content, such as audio books, television shows, movies, and music. In a common application, a user may view video content or listen to audio content on a home entertainment system. Home entertainment systems can include any number of purpose-built media devices, such as televisions, stereos, video game systems, and desktop computers that provide rich content consumption experiences. Users may also use personal computing devices to consume content. For example, a user may use a smart phone, tablet computer, portable media player or laptop computer to consume content. Such devices may include both audio and video output components, or they may include only an audio output component.

Television shows, movies, audio books and the like can include topics and items that may be associated with supplementary or otherwise related content. The items of related content often contain useful or interesting information, such as additional background or explanatory text regarding an event, location or person referenced in the primary content, commentary regarding the primary content in general or a closely related topic, and the like. For example, a television show may reference a historical event, or it may cover only part of a subject. Viewers may be invited to consume additional content related to, e.g., the historical event or other areas of the subject. In some cases, viewers may be provided with a network address of a content server at which they can access the content, or viewers may be shown a commercial or other promotion for another television show with related content.

## BRIEF DESCRIPTION OF DRAWINGS

Embodiments of various inventive features will now be described with reference to the following drawings. Throughout the drawings, reference numbers may be re-used to indicate correspondence between referenced elements. The drawings are provided to illustrate example embodiments described herein and are not intended to limit the scope of the disclosure.

FIG. **1**A is a block diagram of illustrative interactions between a media device, a content management system and a content server, as might occur during presentation of a content item with related content items.

FIG. **1**B is a block diagram of illustrative interactions between a media device and multiple content servers, as might occur during presentation of a content item with related content items.

FIG. **2** is a block diagram of an illustrative media device, content management system, and content servers showing various modules and data stores of the media device and the content management system.

FIG. **3** is a flow diagram of an illustrative process for presenting a content item and related content items according to rules for presentation of related content.

FIG. **4**A is a timeline of presentation of a primary content item and several related content items which may be presented in full or in part at various points during presentation of the primary content item.

FIG. **4**B is a timeline of presentation of combined content comprising portions of a primary content item and portions of related content items.



FIGS. **5**A-**5**D are pictorial diagrams of illustrative user interfaces presenting a primary content item and several related content items, such as those on the timeline of FIGS. **4**A-**4**B.

FIGS. **6**A-**6**B are pictorial diagrams of illustrative user interfaces for configuring rules regarding the presentation of related content during presentation of a primary content item.

## DETAILED DESCRIPTION

### Introduction

Generally described, the present disclosure relates to managing presentation of multiple related content items, in some cases simultaneously or substantially simultaneously. Conventionally, a user may use a media device such as a television or computing device to present a content item. The content may include, but is not limited to, audio books, music, television shows, movies, games or some other electronic content. The content may be associated with supplemental or other related content, such as background content regarding a character or event. In order for the user to access such related content, the user may have to perform a manual process of stopping or pausing presentation of the primary content item in order to access the supplemental content. In some cases, users can access supplemental or related content simultaneously with consumption of the primary content item, such as by using a different device (e.g., a computing device) to access the related content while the primary content is presented on the television.

Aspects of this disclosure relate to identifying and automatically presenting supplemental or related content during presentation of a primary content item. Presentation rules, also referred to herein simply as rules, may be defined which specify which types of related content may be presented, under what circumstances the related content is to be automatically presented or suppressed, which media elements or other portions of a primary content item (e.g., audio or video tracks of a movie) are to be overridden by or mixed with related content, and the like. In some embodiments, a primary content item may contain embedded references to supplemental content that is related to the primary content item as a whole or to a specific portion of the primary content item, such as a person, place, thing, event or period of time. When such an embedded reference is encountered during presentation of the primary content item, the referenced supplemental content item can be accessed and automatically presented according to one or more rules. In some cases, the rules may indicate that the related content item (or some portion thereof) is to override the primary content item (or some portion thereof). For example, when the primary content item is a televised sporting event and the related content item is a local radio broadcast of the sporting event, a rule may specify that the media device is to automatically present the audio element or other audio portion of the local radio broadcast instead of the audio element or other audio portion of the primary content.

The example rules described herein are illustrative only, and not intended to be limiting. In some embodiments, rules may be defined with respect to various aspects or elements of content items (e.g., some rules apply to audio elements or other audio portions and some rules apply to video elements or other video portions), genres of content (e.g., some rules apply to televised sporting events while other rules apply to audio books), and the like. Generally described, a rule can specify which content type and/or media element may override another content type and/or media element, and under

what circumstances such overrides may be implemented. Rules may also specify which content type and/or media elements may be overridden, and under what circumstances. In addition, rules may specify that certain content is not to be overridden, but rather is to be paused or should continue to be presented simultaneously with other content using audio mixing or split screen video display techniques. Further, rules may specify when overrides may be applied automatically, and when users may be notified of the presence of a related content item and may therefore make an affirmative decision regarding the presentation of each content item.

Additional aspects of the disclosure relate to obtaining references to related content from a network-accessible content management system. Rather than references to related content being embedded in a primary content item, the references may be maintained by and obtained from a content management system. The references may be obtained before or during playback of the primary content item. For example, when a user initiates presentation of a content item (e.g., a conventional DVD without embedded references to related content) on a media device, the media device may contact the content management system to obtain references to related content and data regarding portions of the primary content item to which the related content applies. As another example, a user may initiate presentation of a live content item (e.g., a live broadcast of a sporting event) in which some or all related content references may be unknown at the time presentation is initiated. In such cases, the media device can obtain related content references from the content management system in substantially real-time, or periodically during presentation of the primary content.

Further aspects of the disclosure relate to user interaction with the content items and user configuration of presentation rules. For example, the user may access an interface to define presentation rules, set defaults, and the like. In addition, rather than automatically overriding portions of the primary content item with related content, a user may be prompted as to whether the primary content is to be overridden or paused, or whether the related content is to be ignored. For example, when a place is mentioned during a news cast, the place may be associated with a related documentary. A notification may be displayed to the user that the documentary is available. The user may choose to override the video element of the news cast with the video element of the documentary while the audio element of the news cast continues to be presented. Alternatively, the user may choose to pause the news cast in order to view the documentary, or the user may wish to view the documentary and designate the documentary as the primary content item. If a user designates a related content item as a primary content item, then content that is related to the new primary content item—the documentary in this case—can be obtained rather than content that is related to the previous primary content item—the news cast in this case. The previous primary content item may then be a related content item for the new primary content item. Rules may be applied to the new primary content item and the newly-designated related content item, and those rules may result in a different playback configuration than rules applied to the content items under their previous designations.

Although aspects of the embodiments described in the disclosure will focus, for the purpose of illustration, on a media device obtaining related content from network-accessible servers, one skilled in the art will appreciate that the techniques disclosed herein may be applied to any number of processes or applications. For example, related content may reside on the media device itself, or it may be obtained from sources other than network-accessible servers, such as via satellite or cable television systems and the like. Various aspects of the disclosure will now be described with regard to certain examples and embodiments, which are intended to illustrate but not limit the disclosure.

With reference to an illustrative example, a user may wish to consume a content item and also access separate but related content items simultaneously. The user may initiate presentation of a primary content item, such as an audio book, on a media device, such as a smart phone or portable media player. The audio book may be associated with supplemental or related content that may be presented during presentation of the audio book. For example, when the user is listening to an audio book about a songwriter's life, the audio book may contain embedded references to related content, such as network addresses at which the media device can stream excerpts of songs written by the songwriter. In such cases, the excerpts of the songs can be mixed with the audio book (e.g., played simultaneously) at a relevant playback time or location within the audio book, such as during portions describing the conception or recording of the songs.

Rules for how content of one type may override other content types may be defined, either by default or by the user. In the present example, rules may specify that recordings of songs written by the songwriter may be mixed with the audio book, while other related audio (e.g., interviews with the songwriter) may be presented while the audio book is paused. As another example, a video clip may relate to the audio book. If the media device includes video presentation capabilities, a rule may specify that the video clip may be presented with its audio muted such that the audio book may continue to be presented during playback of the video clip.

Content may include both video and audio elements. The audio and video elements, collectively referred to herein as media elements or simply elements, may include elements such as audio tracks, video tracks, or other sensory elements of a movie, audio book, song, video game, or some other electronic content. As one example, a content item may be a sports broadcast that includes both audio elements (e.g., spoken commentary regarding the sporting event) and video elements (e.g., video clips or feeds of the sporting event).

While the sports broadcast is presented, or when presentation is initiated, references to related content, such as a local radio broadcast of the sporting event, may be obtained from a separate content management system or service. Rules can be implemented which allow for or require replacement of the sports broadcast's audio element with the local radio broadcast in the case of a live sports broadcast; otherwise, the rules may allow the media device to offer to pause the video programming to listen to the related audio.

In some cases, the initial content that the user wishes to consume, also referred to as the primary content, may include a video element or other video portion and the related content may also include a video element or other video portion. For example, when the user is watching a television program and there is a documentary related to a portion of the television program, rules may be applied in which the media device replaces the video element of what is currently being watched with the video element of the related content, but retain the audio element of the primary content whenever the primary content is news or "informational" programming. When the primary content is not news, rules may be applied in which video elements of both content items are presented simultaneously in a picture-in-picture ("PIP") or split-screen format. If multiple displays are available, the two video elements may be presented substantially simultaneously on different displays. For example, the media device may control two or more video monitors, or the media device can display one

video element on a video monitor and transmit the second video element, or information about the second video element, to a different device such as a tablet computer.

In some embodiments, a user may configure rules for individual content types or genres. For example, the user may configure rules directed to talk shows, news shows, live baseball games, and a specific television series such that any related video content may automatically override the video of the primary content (e.g., the video element of the related content is presented without any prompt to the user), but the related audio content is not presented (e.g., the audio element from the primary content item remains the only audio element that is presented). The user may configure separate rules for audio books, such that when the related content is music, the music is to be mixed or otherwise simultaneously presented with the audio book content, while related audio content that is not musical is suppressed and the audio book continues to be the only content item that is presented audibly. Alternatively, the user may configure rules such that the audio book is paused and the related audio content is automatically played or the user is prompted as to whether the related audio content is to be played.

In some embodiments, a supplemental or related content item may be associated with multiple portions of a primary content item. For example, a music clip may be associated with a position within a chapter of an audio book, and also associated with the end of the same chapter. In this case, a user may have multiple opportunities to hear the related item. In embodiments where associations of related content would cause the related item to be presented or made available multiple times during playback of the primary content, rules may be applied such that presentation of the related content or an indication of the availability of that related content may be suppressed after the first presentation of the related content or after the first indication that the related content is available. Under other rules, presentation or indication of related content may be allowed even after the related content has been fully played.

Related content may be accessed from a network-accessible content server. Alternatively, or in addition, related content may be stored on a media device or local storage component associated with a media device. Related content may be retrieved at substantially the same time as presentation of a primary content item is initiated. Alternatively, a media device may be configured to retrieve related content periodically. For example, a network enabled television may query a remote content server associated with related content every n seconds or minutes during presentation of the primary content item in order to determine whether new related content is available, particularly in the case of live or substantially live broadcasts. In still other embodiments, a content server or a content management system may be configured to notify a media device of available supplemental information.

In some embodiments, key portions of the primary content item may be designated such that the user is presented with those key portions regardless of any available related content. For example, crucial plot developments in a movie or audio book may be presented to the user regardless of any available related content item or rule that may be applicable at the time. Otherwise, the user may lose track of the development of the primary content item and the user's continued enjoyment of the primary content item may be jeopardized.

In some embodiments, a user may designate a related content item as a primary content item, thereby replacing the previous primary content item. For example, if the user is watching a broadcast of a sporting event and the score is such that the game is uninteresting, the user may wish to make a currently presented related content item (e.g., a documentary, currently being displayed in the secondary presentation window of a PIP display, regarding one of the teams) as the primary content item. In such cases, content that is related to the new primary content item—the documentary in this case—will be obtained, rather than content that related to the previous primary content item—the sporting event in this case.

Networked Content Consumption Environment

Prior to describing embodiments of the related content presentation and rule application process in detail, example networked content consumption environments in which the process may be implemented will be described. FIGS. **1**A and **1**B show example networked content consumption environments and illustrative data flows and interactions between various entities of the networked content consumption environments.

FIG. **1**A illustrates a networked content consumption environment with a media device **102**, a content management system **104**, and a content server **106**. The content management system **104** may store data regarding which content items are related to a primary content item that may be presented on the media device **104**. For example, the content management system **104** can obtain content relationship information from a content server **106** at (1) regarding content offered by the content server **106**. Other techniques for determining and maintaining content relationship and reference information are described below.

At (2), a user may use a media device **102** to present a content item, such as an audio book. In this case, the audio book is considered the primary content item, because it is the content item for which the user initiated presentation. The media device **102** may be associated with a content management system **104** for obtaining references to related content items, or the primary content item itself may be associated with the content management system **104**. In either case, the media device **102** can retrieve related content references from the content management system **104** at (3). The related content references may be obtained in bulk (e.g., all content references obtained in one transmission at or substantially close to initiation of primary content presentation), or they may be obtained during presentation of the primary content item.

At (4), the media device **102** may, during playback of the audio book, encounter a portion of the audio book that is associated with a reference to related content. In this example, the related content item may be a music clip hosted by the content server **106**. The media device can therefore retrieve or stream the related content item from the content server **106** at (5). In some embodiments, the related content item may be hosted by the content management system **104** or a different content server, or it may be stored on the media device **102**.

At (6), the media device **102** can apply presentation rules to the primary content item and the related content item (e.g., the audio book and the music clip) to determine how the related content item should be presented. The media device **102** may then present the related content item according to the rules. In the present example, the user may have configured a rule that music clips related to audio books may be mixed or overlaid with the audio of the audio book at the proper point within the audio book. However, if the related content was a different type of content (e.g., a related audio book), different rules may apply. For example, the applicable rules may specify that the user is to be prompted regarding presentation of the related content rather than automatically presenting both items simultaneously.

In some embodiments, related content may be hosted by and/or retrieved from multiple content servers, rather than from a single content server **106**. The content management system **104** can determine content relationships between various content items hosted by multiple content servers, and the media device can retrieve related content from the appropriate content server **106**.

Turning now to FIG. **1**B, another embodiment of a networked content consumption environment is illustrated. In the networked content consumption environment of FIG. **1**B, no separate content management system **104** is used. Rather, the media device may obtain references to related content directly from the primary content. For example, the primary content item may include embedded references to related content, or the primary content may be associated with separate data regarding related content. In either case, the media device **102** can use the references to obtain the related content from content servers **106***a* and **106***b*, among other content sources.

At (1), the media device **102** can present a primary content item with embedded references to related content items. Returning to the example above, the media device may present an audio book. In some embodiments, the primary content may be associated with related content information that is not embedded into primary content item. The primary content item may be accessed from a storage device associated with the media device **102**, from removable media, from a network-accessible content server, etc.

At (2), the media device **102** may encounter a portion of the primary content item that is associated with a related content item (e.g., a reference to a related content item, such as a music clip, is associated with the portion of the audio book). At (3), the media device **102** may retrieve the related content item from a content server **106***a*. The media device **102** may apply presentation rules and present the related content item, as described above and in detail below (e.g., the media device **102** may mix or overlay the audio of the audio book and the music clip for simultaneous presentation).

Subsequently, the media device may encounter a reference to a second related content item at (5). For example, the media device may encounter a reference to video footage of the subject of the audio book. The reference may indicate that the second related content item is hosted by a different content server **106***b*. In some embodiments, multiple content items may be hosted by and/or retrieved from a single content server as described above with respect to FIG. **1**A, such as the content server **106***a* that hosted the first related content item.

At (6), the media device **102** can retrieve the second related content item from the content server **106***b*. The media device **102** can apply presentation rules regarding the second related content item at (7), and present some portion of or the entire second related content item as appropriate. For example, a rule may be applied such that because the primary content item is an audio book, video content may be presented with the audio element of the video content suppressed so that the audio may continue to be presented.

FIG. **2** illustrates a networked content consumption environment including a communication network **110**, a media device **102**, a content management system **104**, and any number of content servers **106***a*-**106***n*. The communication network **110** may be any wired network, wireless network, or combination thereof. In addition, the network **110** may be a personal area network, local area network, wide area network, cable network, satellite network, cellular telephone network, or combination thereof. For example, the communication network **110** may be a publicly accessible network of linked networks, possibly operated by various distinct parties, such as the Internet. In some embodiments, the communication network **110** may be a private or semi-private network, such as a corporate or university intranet. The communication network **110** may include one or more wireless networks, such as a Global System for Mobile Communications (GSM) network, a Code Division Multiple Access (CDMA) network, a Long Term Evolution (LTE) network, or some other type of wireless network. Protocols and components for communicating via the Internet or any of the other aforementioned types of communication networks are well known to those skilled in the art of computer communications and thus, need not be described in more detail herein.

The media device **102** can correspond to a wide variety of electronic devices. In some embodiments, the media device **102** can include audio or visual output components, such as speakers or video screens. For example, the media device **102** may be a television, stereo, digital video recorder (DVRs), digital media receiver, set-top box, desktop computer, server computer or the like. In some embodiments, a media device **102** may also be a personal device, such as a smart phone, mobile media player, laptop computer or tablet computer that is optionally configured with a video display and/or an audio output component, or that may be connected to external displays, speakers, stereos, or the like. Some media devices **102** may include one or more processors and a storage or memory which may contain software applications executed by the processors. The software of the media device **102** may include modules or applications for establishing communications over the network **110**. In addition, the software applications may include multimedia applications which play or otherwise execute audio programs such as music or audio books, video programs such as movies or television shows, and video games. The storage of the media devices **102** may also contain copies of content to play on the speakers or video screens.

As further shown in FIG. **2**, the media device **102** can include a content presentation module **120**. The content presentation module **120** can manage presentation of a primary content item to a user, obtaining references to related content (e.g., embedded into the primary content item or received from the content management system **104**), and applying rules for presenting multiple content items as described in detail below. In some embodiments, the media device **102** may also include a local content library **122** in which the media device **102** stores primary or related content items. In some cases, the primary content may be streamed from a separate network-accessible system or accessed from removable media (e.g., DVDs).

The content management system **104** illustrated in FIG. **2** may correspond to a logical association of one or more computing devices configured to maintain information regarding related content items and distribute the information to media devices **102**. The information may reference content items hosted by content servers **106**, the content management system **104** itself, or content that may be stored on a media device **102**. For example, the content management system **104** may communicate with the media device **102** via the communication network **110**. The media device **102** may request data regarding content items related to a currently presented or soon-to-be presented content item. The content management system **104** can transmit the requested data to the media device **102**. In some cases, the content management system **104** can transmit the related content to the media device **102**. The content management system **104** can obtain data regarding the related content items from content servers **106**, from

developers of content items, or from an automated analysis of content, such as crowd-source data, social network data, search results, and the like.

The content management system **104** can include a content processing module **140**, a content library **142**, and a related content data store **144**. The content processing module **140** can process potential primary content items and determine whether supplemental or related content is available for portions of the primary content or for the primary content as a whole. For example, the content processing module can access content searches, data from content developers and providers, transcripts of content presentations, etc. The content management system **104** can store data regarding the relationships (e.g., an identifier of the primary content, an identifier of the related content, a network address of the related content, and data regarding the portion of the primary content to which the related content applies) in the related content data store **144**. In some cases, the content management system **104** may store primary and/or related content in a content library **142**. For example, a content developer may establish a content management system **104** that hosts primary content items in the content library **142** and includes predetermined references to related content in the related content data store **144**.

The content servers **106***a*-**106***n* can correspond to logical associations of one or more computing devices for hosting content and servicing requests for the hosted content over the network **110**. For example, a content server **106***a* can include a web server component corresponding to one or more server computing devices for obtaining and processing requests for content (such as streaming video or audio) from the media device **102**, the content management system **104**, or other devices or service providers. In some embodiments, one or more content servers **106** may be associated with a CDN service provider, an application service provider, etc.

In some embodiments, the networked content consumption environment may include additional or fewer components that those illustrated in FIG. **2**. For example, as illustrated in FIG. **1**A, a media device **102** may connect directly to content servers **102** and not utilize the services of a content management system **104**.

Process for Rule-Based Presentation of Multiple Content Items

FIG. **3** illustrates a process **300** that may be used to for rule-based presentation of multiple content items. Advantageously, the process **300** may be automatically performed by a media device **102** during presentation of a primary content item such that related content items may be presented to enhance the user's content consumption experience. Elements of related content may override elements of the primary content according to certain rules, while elements of the primary content may override elements of the related content according to the same rules or other rules. In addition, users may be interactively prompted to determine whether to present related content and which portions thereof to present or override.

The process **300** begins at block **302**. For example, if the process **300** is implemented by a media device **102**, the process **300** may begin automatically upon power up or it may be manually initiated by a user wishing to consume content. The process **300** may be embodied in a set of executable program instructions stored on a computer-readable medium, such as one or more disk drives, of a computing system with which the media device **102** is associated. When the process **300** is initiated, the executable program instructions can be loaded into memory, such as RAM, and executed by one or more processors of the computing system. In some embodiments, the computing system may include multiple computing devices, such as servers, and the processes may be executed by multiple servers, serially or in parallel.

At block **304**, the primary content item may be presented. As described above, the primary content may be any type of electronic content. The primary content may be streamed from a network-accessible server, loaded from a local storage device or removable media, etc. The primary content item may be associated with various related content items, and data regarding the related content items may be obtained as described above.

FIG. **4**A shows a timeline of an illustrative content item, in this case a television broadcast **410** of a sporting event between Team A and Team B. At various points in time (T**1**, T**2** and T**3**) the television broadcast **410** is associated with related content **420**, **430** and/or **440**. The related content items may relate to the primary content item **410** as a whole, or to a particular element of the primary content item **410**, such as a person, place, thing, event, etc. Related content **420** is a documentary regarding construction of the stadium in which the sporting event between Team A and Team B is taking place, while related content **430** is a local radio broadcast of the sporting event in general. Related content **440** includes video highlights of a record that is broken during the sporting event. Because it is difficult to predict when a record may be broken (or when other events occur in a live broadcast), such related content items may be associated with the primary content item **410** in real-time or substantially real-time, as described in detail below.

With continuing reference to FIG. **3**, at decision block **306** the media device **102** may determine whether there is related content available associated with the primary content **410** at the current presentation time or content related to a soon-to-be presented portion of the primary content item **410**. In the present example, the media device **102** may determine at times T**1**, T**2**, and T**3** that a related content item is available and proceed to decision block **308**. If there is no related content available at the present time (e.g., a time between T**2** and T**3** in the example illustrated in FIG. **4**A), the process may proceed to decision block **318** where the media device **102** determines whether there is primary content **410** remaining to be presented.

At decision block **308**, the media device **102** may determine whether to present to the user an option, prompt or some other notification regarding the related content item. The media device **102** may store or access rules regarding which related content items and types to automatically present to the user. For example, if the related content item is a video and the primary content is a video, rules or policies may apply such that the user should be prompted rather than automatically pausing or overriding the video element of the primary content item **410**. However, if the media device **102** is capable of presenting multiple video elements simultaneously (e.g., PIP or split-screen), then no user prompt may be needed.

In some embodiments, the media device **102** may not have information about the specific characteristics of the content item, such as whether it is has both video and audio elements or only an audio element. Rather, the information available to the media device **102** (e.g., embedded into the primary content item or received separate from the primary content item) may only indicate the location from which to obtain the related content item and/or an identifier of the related content item. In such cases, the media device **102** may prompt the user for a command regarding the related content item or passively notify the user that related content is available should the user wish to consume it. The related content item may be obtained from its source in order to determine its nature (e.g., whether

it is video or audio content) in order to provide the user with additional information, or the nature of the related content item may be determinable from the reference itself (e.g., a file extension included in the reference).

In the present example, at time T1 the media device **102** may determine that no user notification should be presented regarding related content item **420**. Such a determination may be based, for example, on a rule regarding the presentation of related content during a preliminary portion of a sporting event broadcast. Under different circumstances (e.g., after the sporting event has begun), different rules may apply and may specify that the user is to be notified of the related content item **420** rather than automatically presented with the related content item **420**. In such cases the process **300** may proceed to block **314**, where the related content item is retrieved, and subsequently to block **316**, where presentation rules are applied.

The related content item **420** includes a video element. In addition, the primary content item **410**, while also including a video element, is in a preliminary period (e.g., pregame). In such cases, the rules applied in block **316** may specify that the video element of both items is to be presented via PIP or split-screen display. FIG. **5**A illustrates such a simultaneous presentation of video content. As illustrated in FIG. **5**A, related content **420** is presented in the main portion of the display area, while the primary content **410** is presented in the secondary PIP portion of the display area. In addition, the audio element of the related content **420** is presented, while the audio element of the primary content **410** is overridden or suppressed. The presentation rules may specify this approach because the primary content **410** is in a preliminary period. Other periods of the primary content **410** (e.g., post-game, during commercial breaks) may also result in the primary content **410** being displayed in the secondary portion of the display area if a related content item with a video element is available or is currently being presented.

As seen in the content timeline of FIG. **4**A, the documentary **420** continues after the game begins at time T2. During a subsequent iteration of the process **300** at time T2, rules may be applied which specify that the display of the primary content **410** (e.g., the broadcast of the game) is to be changed to the main display area at time T2. The documentary **420** may be changed to the secondary PIP display area, or the presentation of the documentary **420** may be stopped altogether.

As another example, during a subsequent iteration of the process **300** at time T2 the media device **102** may determine at block **306** that a second related content item **430**—the local radio broadcast of the sporting event—is available. The rules applied at block **316** may indicate that related content of this nature (e.g., an audio-only local broadcast of the sporting event) overrides the audio element of the primary content item **410**. As seen in FIG. **5**B, the video element of the primary content item **410**—the television broadcast—may be presented while the audio element of the primary content item **410** is suppressed. In its place, the audio element of the local radio broadcast **430** may be presented.

Returning to FIG. **3**, during a subsequent iteration of the process **300** at time T3 the media device **102** may determine at block **306** that a third related content item **440**—the highlights of the previous record—is available. At **308**, preliminary rules may be applied which specify that in such cases the user is to be notified of the related content rather than automatically presented with the related content. For example, a rule may specify that when the primary content **410** is a television broadcast of a sporting event and the sporting event is in progress, related video content is not to be automatically presented. Rather, a prompt or other notification is to be presented to the user so that the user may select to display the content. As seen in FIG. **5**C, an overlay notification **510** is presented so as to be conspicuous to the user but without interfering with consumption of the primary content item **410**. The user may activate the notification **510**, such as by using a remote control, mouse, touch screen interaction or voice command. The notification **510** of FIG. **5**C is illustrative only. Other types of notifications may be presented, such as more intrusive visual prompts with interface controls that must be activated or cancelled, audible notifications such as beeps, and the like.

As seen in FIG. **5**D, the highlights **440** may be presented to the user in a secondary PIP display area. Audio from the highlights **440** may be suppressed, in a manner similar to the suppression of the audio from the primary content **410**, due to the presentation of the local radio broadcast **430**. In some cases, different rules may apply, such as presentation of the highlights in the main display area while the primary content item is moved to the secondary PIP display area. The audio from the highlights **440** may also be presented while the audio from the primary content item **410** and the location radio broadcast **430** is suppressed. As yet another example, different rules may apply such that the video from the primary content item **410** and audio from the local radio broadcast **430** are both paused while the both video and audio elements of the highlights **430** are presented on the media device **102**.

Turning now to FIG. **4**B, an illustrative timeline **450** of a combined content presentation is depicted. The presentation in FIG. **4**B may be produced using the same processes and systems disclosed above with respect to FIG. **4**A. The primary content item of FIG. **4**B is an audio narration **460** of an article from a travel magazine relating to travel in Paris, France. As explained previously, aspects of the present disclosure may be used with primary content items of many sorts, which may comprise media other than audio. When a primary content item does comprise an audio recording, the audio may or may not comprise narration of textual content. For example, the audio may correspond to an unscripted radio show, an audio element of a television show, a so-called "podcast," a live concert, or any other sort of audio content. When audio does comprise narration of textual content, the text may come from a variety of sources other than magazines, including books, newspapers, web sites, plays, etc.

With respect to timeline **450**, various attributes of audio narration **460** may be identified at various points in time (T1, T2, T3, T4 and T5), and related content items associated with the identified attributes may be selected. An attribute of primary content item **460** may include a person, place, object, event, activity, time period, or any other thing that is described, portrayed, mentioned, discussed, or referenced in the primary content item. An attribute may also relate to a contextual aspect of primary content item **460**, and may include, e.g., a genre, mood, location, historical setting, language or time of day. The presence or relevance of an identified attribute in the primary content item **460** may not be limited to a single point in time. Rather, an identified attribute may continue to be relevant for a period of time following the point at which it is first identified, and it may become relevant repeatedly at various points thereafter. For example, an attribute such as a historical landmark may be mentioned briefly at the beginning of a travel article, discussed in detail for an extended duration in the middle of the article, and referred back to at the end of the article. In this example, the same attribute is identified at least three times within a single primary content item, and the relevance of the attribute continues for various periods of time at each point. Thus, any

related content items associated with an identified attribute may be presented substantially within the various periods of time at which the attribute is relevant to the primary content item, but the precise timing may vary according to presentation rules.

The attributes of a primary content item may be identified by analyzing the primary content item itself, e.g., the audio narration in the case of primary content item **460**, or by analyzing a textual representation of the primary content item, such as the magazine article that audio narration **460** is based on. The related content items **470**-**498** associated with the identified attributes of primary content item **460** might come from a source that is closely related to the primary content item, or it might come from an unrelated source. For example, the related content items depicted in FIG. **4**B include textual excerpts **470**-**474** and images **480**-**484**, all of which may have been published in a magazine along with the text of the magazine article on which audio narration **460** is based. FIG. **4**B also depicts images **490**, **492**, **498**, along with map **494** and audio clip **496**, all of which may come from sources other than the magazine in which the narrated article was published. As mentioned above with respect to FIG. **4**A, related content items may be associated with primary content item **460** in real-time or substantially real-time. Furthermore, the number of attributes and related content items discussed with respect to FIG. **4**B is limited for the sake of clarity, but in some embodiments many more attributes and related content items may be identified, selected, and presented. Any content item, regardless of whether it is a primary or related content item, may be part of some larger content item. For example, a content item may be part of a larger text (e.g., comprising additional words), a larger audio sequence (e.g., with a greater temporal duration), a larger video sequence (e.g., comprising additional video frames), a larger image (e.g., depicting a more expansive scene), or a larger collection of content (e.g., comprising multiple items in different mediums).

Referring now to timeline **450**, at time T**1** the audio narration **460** begins with a discussion of transportation options that a traveler might use to reach Paris. Based on this discussion, attributes such as transportation generally or a specific airline that flies to Paris may be identified. Related content associated with these attributes may then be selected. Related content items may include the text excerpt "Getting to Paris," from the magazine article on which audio narration **460** is based, or image **490**, showing an airplane belonging to the specific airline that was identified from the narration. At time T**2**, audio narration **460** may turn to a discussion of recommended accommodations in the Paris area. Based on this discussion, attributes such as accommodations generally or a specific recommended hotel may be identified, and related content such as the text "Where to Stay" or an image of a room from the recommended hotel may be selected. At time T**3**, discussion may turn to notable tourist attractions in Paris, beginning with the Eiffel Tower. This discussion may continue through times T**4** and T**5** with discussion of Notre Dame and the Louvre, respectively. The discussion of sightseeing may include details about the attractions themselves, as well as topics like navigating Paris by walking or public transportation. Accordingly, attributes such as Paris streets and Paris landscapes may be identified, along with the Eiffel Tower, Notre Dame and the Louvre. Related content items selected from these attributes may include text **474** and images **480**-**484**, all from the magazine article on which audio narration **460** is based, along with map **494**, audio clip **496**, and image **498**, all from other sources. Image **480** depicts the Eiffel Tower, image **482** depicts Notre Dame, and image **484** depicts the Louvre. Map **494** may depict the streets of Paris, including a highlighted route between each of the attractions that correspond to identified attributes, obtained from a publicly accessible mapping service. Audio clip **496** may comprise a recording of the cathedral bells at Notre Dame, obtained from a library of stock recordings. Image **498** may comprise a photograph of a Parisian park, tagged with GPS location information indicating that it is in the vicinity of the Louvre, and obtained from a social media web site.

As described previously with respect to FIG. **3** and FIG. **4**A, presentation rules may be applied to determine how related content items should be presented. In some embodiments, presentation rules may define which portions of which content items are presented at various times. In addition, presentation rules may define a size (e.g., one or more spatial dimensions such as height, width, length or depth) or position of presentation for a visual element of a content item, or a volume level for an audio element of a content item. Presentation rules may also specify that multiple content items are presented simultaneously, such as by mixing of audio content, split screen presentation of visual content, or combining visual elements from a first set of content items with audio elements from a second set of content items. In some embodiments, presentation rules may be used to determine transitions or animations, comprising specified changes in size, position, volume level, or other presentation aspects over a specified period of time.

The presentation rules that are applied to a primary content item and related content items may be configured by a user, as described below with respect to FIGS. **6**A and **6**B. In addition, some presentation rules may be defined by default, while other presentation rules may be tailored to specific content items or groups of content items. Tailored presentation rules may be delivered with the corresponding content items, such as by embedding the rules in the content items, or by including references to the rules in the same data package as the content items.

FIGS. **6**A and **6**B show illustrative user interfaces **600***a* and **600***b*, respectively, that may be used to configure rules for presentation of primary and related content items. As seen in FIG. **6**A, a user may specify general settings that apply to all video and audio content by default. For example, if a multimedia content item is primarily video-based (e.g., sports), settings **602**, **604** may be configured regarding when to override the audio and/or video elements of the device. If a multimedia content item is primarily audio-based (e.g., some news casts), or if the content is only audio (e.g., audio books), then different settings **606**, **608** may be configured by the user.

FIG. **6**B illustrates an example interface **600***b* to configure genre-specific settings. For example, the settings **652**, **654** for sporting events may be configured independently of the default settings **602**, **604** for video-based content, as set in the interface **600***a* of FIG. **6**A. As another example, audio books may provide an opportunity to utilize settings **656**, **658** that do not apply to general audio-based content. For example, music may be mixed with the audio element of an audio book, while other primary content items that are primarily audio-based may not experience the same effectiveness from mixing or otherwise combining related content audio elements with the primary content audio element.

Terminology

Depending on the embodiment, certain acts, events, or functions of any of the processes or algorithms described herein can be performed in a different sequence, can be added, merged, or left out altogether (e.g., not all described operations or events are necessary for the practice of the algorithm). Moreover, in certain embodiments, operations or

events can be performed concurrently, e.g., through multi-threaded processing, interrupt processing, or multiple processors or processor cores or on other parallel architectures, rather than sequentially.

The various illustrative logical blocks, modules, routines, and algorithm steps described in connection with the embodiments disclosed herein can be implemented as electronic hardware, computer software, or combinations of both. To clearly illustrate this interchangeability of hardware and software, various illustrative components, blocks, modules, and steps have been described above generally in terms of their functionality. Whether such functionality is implemented as hardware or software depends upon the particular application and design constraints imposed on the overall system. The described functionality can be implemented in varying ways for each particular application, but such implementation decisions should not be interpreted as causing a departure from the scope of the disclosure.

The steps of a method, process, routine, or algorithm described in connection with the embodiments disclosed herein can be embodied directly in hardware, in a software module executed by a processor, or in a combination of the two. A software module can reside in RAM memory, flash memory, ROM memory, EPROM memory, EEPROM memory, registers, hard disk, a removable disk, a CD-ROM, or any other form of a non-transitory computer-readable storage medium. An exemplary storage medium can be coupled to the processor such that the processor can read information from, and write information to, the storage medium. In the alternative, the storage medium can be integral to the processor. The processor and the storage medium can reside in an ASIC. The ASIC can reside in a user terminal. In the alternative, the processor and the storage medium can reside as discrete components in a user terminal.

Conditional language used herein, such as, among others, "can," "could," "might," "may," "e.g.," and the like, unless specifically stated otherwise, or otherwise understood within the context as used, is generally intended to convey that certain embodiments include, while other embodiments do not include, certain features, elements and/or steps. Thus, such conditional language is not generally intended to imply that features, elements and/or steps are in any way required for one or more embodiments or that one or more embodiments necessarily include logic for deciding, with or without other input or prompting, whether these features, elements and/or steps are included or are to be performed in any particular embodiment. The terms "comprising," "including," "having," and the like are synonymous and are used inclusively, in an open-ended fashion, and do not exclude additional elements, features, acts, operations, and so forth. Also, the term "or" is used in its inclusive sense (and not in its exclusive sense) so that when used, for example, to connect a list of elements, the term "or" means one, some, or all of the elements in the list.

Conjunctive language such as the phrase "at least one of X, Y and Z," unless specifically stated otherwise, is to be understood with the context as used in general to convey that an item, term, etc. may be either X, Y, or Z, or a combination thereof. Thus, such conjunctive language is not generally intended to imply that certain embodiments require at least one of X, at least one of Y and at least one of Z to each be present.

While the above detailed description has shown, described, and pointed out novel features as applied to various embodiments, it can be understood that various omissions, substitutions, and changes in the form and details of the devices or algorithms illustrated can be made without departing from the spirit of the disclosure. As can be recognized, certain embodiments of the inventions described herein can be embodied within a form that does not provide all of the features and benefits set forth herein, as some features can be used or practiced separately from others. The scope of certain inventions disclosed herein is indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed is:

**1**. A system for presenting multiple content items, the system comprising:

a data store configured to store computer-executable instructions; and

a computing device in communication with the data store, wherein the computing device comprises a processor, and wherein the computing device when executing the computer-executable instructions, is configured to:

cause presentation of a primary content item comprising a primary audio element and a primary video element, wherein the primary content item is associated with data referencing one or more related content items, each of the one or more related content items related to at least a portion of the primary content item, and wherein the primary content item includes a key portion to be presented regardless of whether any related content items are related to the key portion;

obtain, based at least partly on the data referencing the one or more related content items, a first related content item of the one or more related content items, the first related content item comprising at least one of a secondary audio element and a secondary video element;

determine an attribute of content portrayed in a first portion of the primary content item;

determine, based at least partly on the attribute and one or more presentation rules regarding simultaneous presentation of multiple content items, a presentation configuration for the primary content item and the first related content item, the presentation configuration specifying which of the primary audio element, the primary video element, the secondary audio element, and the secondary video element to present at particular times during simultaneous presentation of the primary content item and the first related content item;

cause substantially simultaneous presentation of the primary content item and the first related content item according to the presentation configuration;

determine that presentation of the key portion of the primary content item will occur at a particular time; and

at the particular time, cause presentation of the key portion of the primary content item instead of causing simultaneous presentation of the primary content item and the first related content item according to the presentation configuration.

**2**. The system of claim **1**, wherein the one or more presentation rules specify that at least one of an audio element or video element of a content item is to override at least one of an audio element or video element of another content item associated with a particular attribute.

**3**. The system of claim **1**, wherein the attribute of content portrayed in the first portion of the primary content item is associated with at least one of a person, place, object, event, activity, language, mood, location, time period, or historical setting portrayed in the primary content item.

**4**. The system of claim **1**, wherein the first related content item is related to one of a person, place, thing, or event of the primary content item.

5. The system of claim 1, wherein the first related content item comprises the first audio element, and wherein the presentation configuration specifies that the primary audio element and the secondary audio element are to be presented simultaneously.

6. The system of claim 1, wherein the first related content item comprises the secondary video element, and wherein the presentation configuration specifies that the primary video element and the secondary video element are to be presented simultaneously.

7. A computer-implemented method for presenting multiple content items, the computer-implemented method comprising:

under control of one or more computing devices configured with specific computer-executable instructions,

obtaining a primary content item comprising a first media element, wherein the primary content item is associated with one or more related content items, each of the one or more related content items related to at least a portion of the primary content item, and wherein the primary content item includes a key portion to be presented regardless of whether any related content items are related to the key portion;

obtaining a related content item of the one or more related content items, the related content item comprising a second media element, wherein a first portion of the related content item is related to a first portion of the primary content item, and wherein a second portion of the related content item is related to a key portion of the primary content item;

determining an attribute of content portrayed in the first portion of the primary content item; and

determining, based at least partly on the attribute and one or more presentation rules regarding presentation of related content items during presentation of primary content items, a presentation configuration for the first media element and the second media element at a first particular time corresponding to the first portion of the primary content item and a second particular time corresponding to the key portion of the primary content item;

causing presentation of at least one of the first media element and the second media element at the first particular time according to the presentation configuration; and

causing presentation of the first media element at the second particular time instead of causing presentation of at least one of the first media element and the second media element at the second particular time according to the presentation configuration.

8. The computer-implemented method of claim 7, wherein the first media element comprises an audio element or a video element.

9. The computer-implemented method of claim 7, wherein the one or more presentation rules specify that at least one of an audio element or video element of a content item is to override at least one of an audio element or video element of another content item associated with a particular attribute.

10. The computer-implemented method of claim 7, wherein the attribute of content portrayed in the first portion of the primary content item relates to at least one of a person, place, object, event, activity, language, mood, location, time period, or historical setting portrayed in the primary content item.

11. The computer-implemented method of claim 7, wherein the primary content item is associated with data referencing the one or more related content items, the data indicating to which portion of the primary content item at least one of the one or more related content items is related.

12. The computer-implemented method of claim 7, further comprising generating a notification regarding the related content item, wherein presentation of the second media element is further based at least partly on a user response to the notification.

13. The computer-implemented method of claim 7, wherein the first media element and the second media element are presented simultaneously at the first particular time.

14. The computer-implemented method of claim 7, wherein the second media element is presented instead of the first media element at the first particular time.

15. The computer-implemented method of claim 7, wherein the first media element is paused during presentation of the second media element at the first particular time.

16. The computer-implemented method of claim 7, wherein the primary content item further comprises a third media element, and wherein the related content item further comprises a fourth media element.

17. The computer-implemented method of claim 16, further comprising causing presentation of the fourth media element at the first particular time according to the one or more presentation rules.

18. The computer-implemented method of claim 16, further comprising suppressing presentation of the fourth media element at the first particular time according to the one or more presentation rules.

19. The computer-implemented method of claim 7 further comprising:

receiving an indication that a user has designated the related content item as a new primary content item;

obtaining a second related content item content item comprising a third media element, wherein the second related content item is related to a second portion of the new primary content item; and

determining, based at least partly on the attribute and the one or more presentation rules, a presentation configuration for the third media element at a particular time corresponding to the second portion of the new primary content item.

20. The computer-implemented method of claim 7, wherein the primary content item comprises an audio element, and wherein determining the attribute of content portrayed in the first portion of the primary content item comprises analyzing at least one of the audio element or a textual representation of the audio element.

21. The computer-implemented method of claim 7, wherein determining the presentation configuration comprises:

determining a first presentation rule of the one or more presentation rules that specifies that certain media elements of primary content items associated with the attribute are to be suppressed during playback of certain media elements of secondary content items; and

determining to suppress the first media element during presentation of the second media element.

22. A non-transitory computer readable medium comprising executable code that, when executed by a processor, causes a computing device to perform a process comprising:

obtaining a primary content item comprising a first media element, wherein the primary content item is associated with one or more related content items, each of the one or more related content items related to at least a portion of the primary content item;

obtaining a first related content item of the one or more related content items, the first related content item com-

prising a second media element, wherein the first related content item is related to a first portion of the primary content item;

obtaining a second related content item of the one or more related content items, the second related content item comprising a third media element, wherein the second related content item is related to a key portion of the primary content item, and wherein the key portion of the primary content item is to be presented regardless of whether any related content items are related to the key portion;

determining an attribute of content portrayed in the first portion of the primary content item;

determining, based at least partly on the attribute and one or more presentation rules regarding presentation of related content items during presentation of primary content items, a presentation configuration for the first media element and the second media element at a first particular time corresponding to the first portion of the primary content item and at a second particular time corresponding to the key portion of the primary content item; and

causing presentation of at least one of the first media element and the second media element at the first particular time according to the presentation configuration;

causing presentation of the first media element at the second particular time instead of causing presentation of at least one of the first media element and the second media element at the second particular time according to the presentation configuration.

**23**. The non-transitory computer readable medium of claim **22**, wherein the first media element comprises an audio element or a video element.

**24**. The non-transitory computer readable medium of claim **22**, wherein the one or more presentation rules specify that at least one of an audio element or video element of a content item is to override at least one of an audio element or video element of another content item associated with a particular attribute.

**25**. The non-transitory computer readable medium of claim **22**, wherein the attribute of content portrayed in the first portion of the primary content item relates to at least one of a person, place, object, event, activity, language, mood, location, time period, or historical setting portrayed in the primary content item.

**26**. The non-transitory computer readable medium of claim **22**, the process further comprising generating a notification regarding the related content item, wherein presentation of the second media element is further based at least partly on a user response to the notification.

**27**. The non-transitory computer readable medium of claim **22**, wherein the first media element and the second media element are presented simultaneously at the first particular time.

**28**. The non-transitory computer readable medium of claim **27**, wherein both the first media element and the second media element comprise video elements, and wherein the first media element and the second media element are presented on a single display device in at least one of a split screen format and a picture-in-picture format at the first particular time.

**29**. The non-transitory computer readable medium of claim **27**, wherein both the first media element and the second media element comprise video elements, and wherein the first media element and the second media element are presented on separate display devices at the first particular time.

**30**. The non-transitory computer readable medium of claim **22**, wherein the second media element is presented instead of the first media element at the first particular time.

**31**. The non-transitory computer readable medium of claim **22**, wherein presentation of the first media element is paused during presentation of the second media element at the first particular time.

**32**. The non-transitory computer readable medium of claim **22**, wherein obtaining the related content item comprises streaming the related content item from a network-accessible server.

**33**. The non-transitory computer readable medium of claim **22**, wherein determining the presentation configuration comprises:

determining a first presentation rule of the one or more presentation rules that specifies that certain media elements of primary content items associated with the attribute are to be presented substantially simultaneously with certain media elements of secondary content items; and

determining to present the first media element substantially simultaneously with presentation of the second media element.

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UNITED STATES PATENT AND TRADEMARK OFFICE

# CERTIFICATE OF CORRECTION



| | |
|---|---|
| PATENT NO. | : 9,285,947 B1 |
| APPLICATION NO. | : 13/770954 |
| DATED | : March 15, 2016 |
| INVENTOR(S) | : Guy Ashley Story, Jr. |

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the claims

In column 18 at line 33, In Claim 19, change "content item content item" to --content item--.

Signed and Sealed this
Fourth Day of October, 2016

Michelle K. Lee

Michelle K. Lee
*Director of the United States Patent and Trademark Office*